TABLE OF CONTENTS

		PAGE
Chromosomal configurations of *Oenothera* species and crosses and their probable significance	*J. Theron Illick*	1
Root system of *Quercus macrocarpa* in relation to the invasion of prairie (with ten figures)	*J. E. Weaver and Joseph Kramer*	51
A cytological study of *Tulasnella* (with seventy-nine figures)	*Donald P. Rogers*	86
Ecological relationships of *Pinus sabiniana*. Contributions from the Hull Botanical Laboratory 438 (with fourteen figures)	*Geo. W. Graves*	106
Cytology of *Antennaria*. I (with thirty-two figures)	*G. Ledyard Stebbins, Jr.*	134
Vascular system of young plants of *Medicago sativa* (with thirty-four figures)	*Clara W. Winter*	152
Multiple male cells in *Cupressus arizonica* (with seventeen figures)	*Clifton C. Doak*	168
Ecological aspects of transpiration. II (with six figures)	*Chas. J. Whitfield*	183
Chemical composition of *Aspergillus niger* as modified by zinc sulphate	*Nandor Porges*	197
Phases of the anatomy of *Asparagus officinalis* (with ten figures)	*Chas. H. Blasberg*	206
Composition of the pulp and seeds of *Adansonia digitata*	*R. A. Greene*	215
Effects of ultraviolet radiation upon representative species of *Fusarium* (with plate I and six figures)	*Alice A. Bailey*	225
Gametogenesis in *Vaucheria* (with thirty-five figures)	*John N. Couch*	272
Further studies on cold resistance in evergreens, with special reference to the possible rôle of bound water	*Bernard S. Meyer*	297
Cytology of *Antennaria*. II (with plates II, III and thirteen figures)	*G. Ledyard Stebbins, Jr.*	322

28429

		PAGE
Methods for controlling the environment of greenhouse plants (with three figures)	*P. W. Wilson and C. E. Georgi*	346
Formation of callus knots on apple grafts as related to the histology of the graft union (with plates IV–VII)	*John E. Sass*	364
Mineral and nitrogen content of the leaves of some forest trees at different times in the growing season	*J. S. McHargue and W. R. Roy*	381
Cytology of *Anchusa* and its relation to the taxonomy of the genus (with seven figures)	*Stanley G. Smith*	394
Fasciation in red pine (with twelve figures)	*Raymond Kienholz*	404
Composition of the beans of *Parkinsonia aculeata*	*R. A. Greene*	411
Relation of lenticels and surface area to respiration in the potato tuber	*W. H. Michaels*	416
Relation of *Pinoxylon dakotense* Knowlton to *Protopiceoxylon* Gothan	*Richard Kräusel*	419
Embryo abortion in early-ripening varieties of *Prunus avium*. Contributions from the Hull Botanical Laboratory **439** (with forty-one figures)	*H. B. Tukey*	433
Origin and development of tissues in *Equisetum scirpoides*. Contributions from the Hull Botanical Laboratory **440** (with plate VIII and twenty-nine figures)	*M. A. Johnson*	469
Walnut yellows in relation to ash composition, manganese, iron, and other ash constituents (with two figures)	*A. R. C. Haas*	495
Cytological studies in the genus *Hieracium* (with fifty-six figures)	*A. H. Gustafson*	512
Study of the life history of *Brassica oleracea* (with sixteen figures)	*O. H. Pearson*	534
Chromosome pairing, structural hybridity, and fragments in *Rosa* (with twenty-three figures)	*Eileen W. Erlanson*	551
Division of the generative nucleus in the pollen tube of *Lilium* (with plate IX and six figures)	*Joseph O'Mara*	567
Determinate cleavage polyembryony, with special reference to *Dacrydium* (with ten figures)	*J. T. Buchholz*	579

		PAGE
New or otherwise noteworthy Compositae. VIII	*Earl E. Sherff*	589
Vascular anatomy of the transition region of certain solanaceous plants (with nine figures)	*Albert F. Thiel*	598
A Neogene species of *Sequoia* from Japan (with thirteen figures)	*Seido Endo*	605
A Cretaceous sweet gum (with one figure)	*Roland W. Brown*	611
"Geo-growth" reaction of roots of *Lupinus* (with one figure)	*A. E. Navez*	616
Relation of oxygen pressure and temperature to the influence of ethylene on carbon-dioxide production and on shoot elongation in very young wheat seedlings	*W. B. Mack and B. E. Livingston*	625
Structural and metabolic after-effects of soaking seeds of *Phaseolus*. Contributions from the Hull Botanical Laboratory **441** (with three figures)	*Wm. M. Bailey*	688
Parallelism of precipitation reactions and breeding results in the genus *Iris*. I (with one figure)	*Robt. C. Foster and Geo. S. Avery, Jr.*	714
Germination behavior of *Magnolia grandiflora*. Contributions from the Hull Botanical Laboratory **442**	*Clytee R. Evans*	729
Effects of sulphuric-acid delinting on cotton seeds. Contributions from the Hull Botanical Laboratory **443** (with four figures)	*Auval H. Brown*	755
Flower bud formation in the Concord grape (with twenty-two figures)	*John C. Snyder*	771
Cytological and phylogenetic studies in the Cucurbitaceae (with sixteen figures)	*Thos. W. Whitaker*	780
Mycorhizas of trees and shrubs (with six figures)	*LeRoy K. Henry*	791
Physiological variations in certain crop plants following seed exposure to high-voltage x-rays (with six figures)	*C. N. Moore and C. P. Haskins*	801
Pleistocene forests of central Illinois. Contributions from the Hull Botanical Laboratory **444** (with one figure)	*John Voss*	808
Abnormality in sweet cherry blossoms and fruit (with five figures)	*G. L. Philp*	815

PAGE

A sphenopterid fructification from the Pennsylvanian of Michigan (with three figures) - - - *C. A. Arnold* 821

The liquid wax of seeds of *Simmondsia californica* *R. A. Greene and E. O. Foster* 826

BRIEFER ARTICLES—

A demonstration of basal growth - - - - - *C. J. Gilgut and L. H. Jones* 221

Root formation from leaf cuttings - - - - *Edith A. Roberts and Julia R. Lawrence* 421

Partial phyllody of *Yucca elata* - - - - - *R. S. Campbell and J. G. Keller* 619

An adapter for photomicrography with box cameras - - - - - - - - - - - *T. C. N. Singh* 621

CURRENT LITERATURE - - - - - - - - - 223, 423, 623, 829